RESEARCH ARTICLE

The effects of liking on informational elements in investigative interviews

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Abstract

The efficacy of principles of persuasion and influence in aiding uncooperative individuals to become more cooperative has been well documented in the basic science literature. Less known is their effects in investigative interviews. This study examined the effects of liking (positivity) on informational elements produced in investigative interviews. Interviewees participated in a mock theft experiment and were randomly assigned to tell the truth or lie about the potential theft. Half the interviews were conducted in a high liking condition, the other half in a low liking condition. High liking produced less relevant details in both the interviews and written statements for truthtellers. Rapport had direct, positive effects on relevant and irrelevant details in the interviews but not the written statements and mediated the association between liking and relevant and irrelevant details in the interviews. Veracity condition moderated the association between liking and informational elements; liking had negative effects on relevant details for truthtellers in the interviews and written statements but positive effects on irrelevant details for liars in written statements. These findings suggested the need to examine how and when liking as a social influence tactic may be effective in investigative interviews.

KEYWORDS

interview, liking, rapport, social influence, veracity

1 | SOCIAL INFLUENCE: LIKING EFFECTS ON INFORMATIONAL ELEMENTS IN INVESTIGATIVE INTERVIEWS

The efficacy of principles of persuasion and influence (hereafter social influence) in aiding less engaging or uncooperative individuals to become more engaging and cooperative has been well documented in the literature (Cialdini & Goldstein, 2004; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). This area has been led by the outstanding work of Cialdini and colleagues, who described six principles; Reciprocity, Consistency, Consensus, Authority, Scarcity, and Liking. These principles have been examined and touted for decades by researchers and practitioners alike, although questions challenging their application (concerning possible misuse of the principles for malicious purposes) and efficacy have also been raised (Cialdini, 2009; Muscanell, Guadagno, & Murphy, 2014).

Recent research (reviewed below) has demonstrated that these principles have potential import to forensic interviewing. Many such interviews involve a process of guiding uncooperative individuals to recall and report information, confess to acts, admit to facts, or share previously undisclosed sources; thus, such interactions are ripe with opportunities to leverage principles of social influence. Many interviewers already engage in various strategies and tactics of social influence, consciously or unconsciously, through trial, error, and/or experience. In this article, we test and discuss the efficacy of one of these principles, liking.

1.1 | Social influence in forensic interviews

Recent research has documented the effects of social influence in the context of forensic interviewing. For instance, one study involving interviews of 123 intelligence and investigative interviewers (Goodman-Delahunty & Howes, 2016) provided indirect evidence for that efficacy by indicating that the social influence principles of liking and reciprocity were most often reported as being used in establishing rapport with interviewees. These findings suggested that interviewers clearly believed that social influence principles and tactics worked, and opened the door to experimental research that examined more directly the possible causal effects of social influence in forensic interviews.

In recent years, Matsumoto and Hwang (2018, 2019) utilised a mock theft paradigm to test the causal effects of social influence principles and tactics (reciprocity and authority) on information provided by interviewees. In these studies, participants were asked to provide information about what they did in a file room where they either stole a check or not. Using this paradigm, one study examined whether the principle of reciprocity affected the informational elements in interviewees' responses during an investigative interview (Matsumoto & Hwang, 2018). In that study, reciprocity was operationalised by the interviewer providing a bottle of water to the interviewee prior to the interview about the potential theft. That manipulation produced greater rapport and influenced the informational elements produced by the interviewee. This effect was moderated by veracity condition: offering water produced more relevant details and greater plausibility by liars but not truthtellers and this effect was mediated by rapport.

A second study utilising the same paradigm examined authority (Matsumoto & Hwang, 2019), which was operationalised using the trappings of authority (Cialdini, 2016) involving subtle, indirect cues pertinent to authority in the context and environment (e.g., interviewers' clothes, awards, and photographs with known authority figures hung on walls as evidence from acknowledged experts, Cialdini, 2016). Notably, the authority manipulation did not include any differences in the interviewers' questions or their demeanour. This authority manipulation produced effects on the informational elements but mainly for truthtellers: Truthtellers but not liars provided more information in the high versus low authority conditions. Rapport also had direct effects on the informational elements but authority did not affect rapport and rapport did not mediate the effect of authority on the informational elements. These studies confirmed that factors underlying social influence theory were potentially applicable and notable in investigative interview contexts.

1.2 | The importance of rapport

In addition to social influence principles and tactics, the topic of rapport has gained traction in research on forensic interviewing and for good reason: Rapport has been shown to be a central concept to all kinds of interactions pertaining to relationship building and formation, information elicitation, and therapeutic alliances for years (Alison, Alison, Noone, Elntib, & Christiansen, 2013; Christiansen, Alison, & Alison, 2018; Cialdini, 2009; Duke, Wood, Magee, & Escobar, 2018; Holmberg & Madsen, 2014; Oxburgh & Ost, 2011; Vallano & Compo, 2015). As a different component of social influence, studies have increasingly shown that rapport is important for successful interviews and investigations in forensic contexts as well (Abbe & Brandon, 2014; Alison et al., 2014; Holmberg & Madsen, 2014; Matsumoto & Hwang, 2018, 2019; Walsh & Bull, 2010). For example, Walsh and Bull (2010) demonstrated a positive correlation between rapport development and interview outcomes; a lack of rapport development between interviewer and interviewee was associated with inefficacy in outcomes. Other studies have documented effects of rapport on disclosure of meaningful and complete information earlier in an interview (Goodman-Delahunty, Martschuk, & Dhami, 2014) and more accurate information in eyewitness testimony (Kieckhaefer, Vallano, & Schreiber Compo, 2013; Vallano & Compo, 2011). Rapport has also been reported as a good elicitor of valid information not only from suspects but also from witnesses (Vallano & Compo, 2015). Reviews of the literature (see Meissner, Kelly, & Woestehoff, 2015) have reported positive albeit indirect effects of rapport in forensic interviewing contexts.

One challenging characteristic about rapport is that in many instances it is not turned on and off quickly when needed but fostered and acquired gradually. Thus, the efficacy of developing rapport is an important question for both research and practice, which may be especially true in applied settings because time matters administratively and legally. Relatedly, the field has focused on specific tactics on how to establish rapport in forensic contexts given a limited amount of time. Much effort has been made by applied researchers and thorough interview models have been introduced to the field with empirical evidence, such as the PEACE (Planning/Preparation, Engage/Explanation, Account, Closure/Evaluate, Shawyer & Milne, 2009) and ORBIT models (Observing Rapport-based Interpersonal Techniques; Alison, Alison, Elntib, & Noone, 2010). These models have been developed based on emphasising the contribution of rapport as an efficient interview tactic.

For example, Alison et al. (2013) reported that as part of establishing rapport, motivational interviewing skills (e.g., acceptance, adaptation) were effective in reducing passive responses by interviewees. In this adaptive interviewing approach, the role of rapport is vital in motivating interviewees to provide their responses actively rather than passively, which is best to avoid superficially consuming interview time. Tactics such as motivational or adaptive interviewing skills emphasise humanitarian approaches to forensic interviewing, and those methodologies can be initiated and managed by interviewers because they are based on their own behaviour (such as treating suspects with respect or not) and have been associated with interviewee engagement and information (Christiansen et al., 2018). Thus, interviewer interpersonal competence is a crucial investigative skill that involves strategies that can be initiated and facilitated by interrogators.

The studies cited above examining the effects of the social influence principles of reciprocity and authority also highlighted the important role of rapport and its possible mediation of social influence effects on information provided in investigative interviews (Matsumoto & Hwang, 2018, 2019). In both studies rapport had positive, direct effects on information produced by interviewees. One study documented that reciprocity produced greater rapport which, in turn, mediated the effect of reciprocity on information provided (Matsumoto & Hwang, 2018). These studies not only contributed to notions about the potential efficacy of social influence to information elicitation in investigative interviews, but also added to a growing literature demonstrating the importance of rapport in those interviews and the potential interaction of social influence principles and tactics with rapport. Thus, rapport is an important concept in forensic interviewing settings, and we contend that it mediates the relation between social influence tactics and interview outcomes.

1.3 | Liking

Of the six principles of influence (Cialdini, 2009, 2016; Cialdini & Goldstein, 2004), liking is a powerful factor as likeable people are usually more familiar, similar, and trustworthy compared to unlikable others. Moreover, people are more likely to cooperate when there is greater positivity and less negativity, both essential components of liking. Thus, people are influenced by likability when making decisions or changing attitudes (Cialdini, 2009).

Liking (positivity) is the most common social influence element people experience in social settings and has been associated with both malicious and constructive influences, depending on how the principle is used (Cialdini, 2009; Muscanell et al., 2014). Despite familiarity with this principle and tactic and common acceptance among interviewers (Goodman-Delahunty & Howes, 2016), the influence of liking and its efficacy as a social influence factor have not been systematically examined in research in forensic settings. An extant literature, however, speaks to its potential efficacy. Dutton and Aron (1989) reported that generalised liking for others was associated with levels of conflict-based arousal; that is, people with positive feelings toward others are less easily provoked to conflict or less likely to perceive their interaction with others as resistant or discordant. This was a meaningful finding as even overall positive feelings may be directly or indirectly advantageous in building or improving rapport with less resistance in interviewing contexts. Cialdini (2009) showed that likeable people are inclined to be more influential and are more trustworthy than unlikeable ones. These studies suggested that people may have a tendency to share what they know more willingly with others with whom they feel more positive compared to those toward whom they feel agonistic or negative.

Liking may also have positive effects on rapport. That is, creating positivity, familiarity, and a sense of ease may help establish better operational accord between interactants. Considering that rapport can be defined as smooth or positive interpersonal interactions or relationship quality (Abbe & Brandon, 2014), which involve intrinsic interactional phenomena of mutual feelings (Holmberg & Madsen, 2014, p. 593), the principle of liking rooted from positive mutual feelings between interviewees and interviewers may an important factor in the development and maintenance of rapport.

Despite solid conceptual reasons why the social influence principle of liking should facilitate both better rapport and informational outcomes in forensic interviews, to date these ideas have not been examined experimentally. Such examination is worthwhile, considering contemporary approaches to interviewing that highlight less confrontational, more humanitarian approaches to information gathering. But, a challenge in research on liking is whether its influence in altering attitudes and eventually others' behaviour would be applicable to investigative interviewing contexts in which most people have a strong motivation to disguise or protect themselves for their benefit so that they can avoid legal responsibility or social condemnation. Thus, reasonable questions about its efficacy exist and there is a need to examine these notions in forensic contexts. We did so in this study.

1.4 | Overview of the current study and hypotheses

We examined the effects of liking in an investigative interview with the same mock theft paradigm used to test the effects of reciprocity and authority (Matsumoto & Hwang, 2018, 2019). A standard paradigm was advantageous as it allowed direct comparisons of findings for different social influence tactics across similar methodologies. This study's goal was to contribute further to this area of research by examining the causal influence of liking on rapport and informational outcomes in investigative interviews.

A community sample was randomly assigned to either steal a check and lie or to just look at the check and tell the truth. After committing the mock crime or not, they participated in an investigative interview that was audio–video recorded. We coded three types of informational elements—Relevant and Irrelevant details, and

Plausibility—from the transcribed responses to the main question in that interview. We also coded the same informational elements in a written statement provided by interviewees prior to the interviews. Rapport was assessed by interviewer and interviewee ratings. We tested three hypotheses:

Hypothesis 1 That higher liking will produce greater rapport and more informational elements provided by participants during the interviews and in their written statements.

Hypothesis 2 That rapport will have positive direct effects on the informational elements and will mediate the positive association between liking and informational elements in the interviews and written statements.

Hypothesis 3 That veracity condition will moderate the positive association between liking and the informational elements in the interviews and written statements such that the effects of liking on information will be stronger for liars than truthtellers. That is, given that previous studies (Matsumoto & Hwang, 2018, 2019) have documented veracity condition effects on informational elements produced, we surmised that the amount of information produced by truthtellers would be high and relatively impervious to liking effects, but for liars low enough that high liking would facilitate information production.

2 | METHODS

2.1 | Design

The experiment examined a moderated mediational model with Liking (High vs. Low) and Veracity conditions (Truth vs. Lie) as factors, three informational elements coded from interview transcripts and written statements as dependents (Relevant and Irrelevant Details, and Plausibility), and rapport rated by the interviewers and interviewees as a mediator. Although we did not have a hypothesis for gender, we included it in the overall analyses reported below to test for possible interactions with the main factors. Gender did not produce any significant effects and thus will not be mentioned further.

2.2 | Participants

One hundred fifty-nine participants who were born and raised in the United States completed the study ($n = 80$ females). Their first language was English and all were recruited from a community pool.

2.3 | Measures

Participants began with a series of questionnaires; demographic questions, the General Ethnicity Questionnaire (GEQ; Tsai, Ying, & Lee, 2000), the Brief NEO-Five Factor Inventory (McCrae & Costa Jr, 2004), the Social Dominance Orientation Scale (Pratto, Sidanius, Stallworth, & Malle, 1994), an adapted version of the Schwartz Value Scale (Schwartz, 2006), the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), and the Self-Monitoring Scale (Snyder, 1974). Participants also completed an emotion checklist at the beginning and the end of the experiment, which served as manipulation checks for arousal in the study and liking/positivity. Ratings were made on nine-point scales labelled 0 = None, 4 = Moderate Amount, and 8 = Extremely Strong. All measures except the emotion checklist were omitted from this study.

2.4 | Procedure

After obtaining consent and the pre-session measures, participants were randomly assigned to a veracity condition; the truth condition required participants to look at but not take a check made out to cash and to tell the truth about what they did. The lie condition required participants to take the check and lie about it. Participants were informed that if they were not believed, they would have to stay an extra hour to complete a long questionnaire and receive no additional bonus money. If they were believed, however, they would be allowed to leave early and receive a bonus of anywhere from $0 to $50. In actuality, all participants received a standard fee of $40 and no one was detained. Participants rated the severity of these consequences using a scale from 0, No consequence, to 10, Maximum consequence. The mean was 7.07 (SD = 3.22), indicating that the participants perceived the stakes on a moderate-high level.

During the experiment, participants completed two interviews. The first was brief and involved checking the participant's ID and asking basic questions concerning the purpose of their visit; this first interview occurred before the possible theft. The second interview occurred after the possible theft and was a longer investigative interview, which began by interviewers asking participants to write a statement about what they did in the room in which the theft could have occurred. Participants wrote these statements alone. Then, the remainder of the investigative interview continued, which followed a standard protocol with some background questions, and then questions asking their account of what they did in the room in which the theft could have occurred (same prompt as for the written statement). When the investigative interview was concluded, participants completed post-session measures including the emotion checklist, were debriefed, compensated, and excused.

The liking condition was operationalised by differences in back-channel responses by the interviewers during the interviews. In the high liking condition, interviewers provided back-channel responses such as mm-hmm, uh-huh, head nods, and smiles while the interviewee responded to questions. In the low liking condition, interviewers minimised such back-channel responses and maintained a neutral and objective demeanour while the interviewees talked. Notably, there were no differences in the actual questions delivered during the interviews; the only difference between the condition was the presence or minimisation of back-channel responses by the interviewers. As a direct manipulation check on the conditions, two coders blind to the hypotheses of the experiment coded back-channel responses by the interviewers. Reliability was computed on the first 20 cases and was high, $r(20)$ = .99. In the high liking condition back-channel responses occurred an average of 33.32 times in the interviews compared to near zero counts for the low liking condition.

2.5 | Coding procedures and reliability

Participants' responses in the written statement and investigative interview were transcribed verbatim. We coded two sources of data: their entire response in the written statement and their responses to the prompt from the investigative interview asking what they did in the room before the interview.

2.5.1 | Informational elements

Relevant details, Irrelevant details, and Plausibility in participants' responses were coded using the same procedures reported in the previous studies testing reciprocity and authority (Matsumoto & Hwang, 2018, 2019). Relevant details were any reported detail about what the participant did, that likely occurred during the experiment, and was relevant to the question being answered or the context (i.e., in relation to the actual instructions; e.g., 'I opened the envelope', 'There was a check'). Irrelevant details were any detail that may have occurred during the experiment but was not relevant to the question being asked or the context (e.g., 'The carpet was brown'), or was likely not to have

occurred during the experiment (e.g., 'I met someone'). Plausibility was defined as the degree to which the events described in a participant's responses were likely to have occurred in reality for the average person in the experimental situation with the instructions given (i.e., whether the coder believed the story of the participant). Plausibility was coded on a seven-point scale labelled 0—Not plausible at all, 1—Minimally plausible, 3—Moderately plausibly, and 6—Maximally plausible.

Two coders, both blind to the hypotheses of the study and conditions of the participants, independently coded all responses. The number of relevant and irrelevant details in each response for each case was tallied. Reliabilities were high and acceptable for all codes: for Relevant and Irrelevant details, rs = .97 and .96 (interview), and .99 and .97 (written statement), respectively; for Plausibility, rs = 91 and .90 for interview and written statement, respectively.

2.5.2 | Rapport

Interviewers and interviewees independently rated rapport in the interactions they had with each other using a 10-point scale labelled 0, None at al; 5, A Moderate Amount; and 10, Maximum Amount. Interviewers rated rapport twice, immediately after both interviews; participants/interviewees rated rapport once, immediately after the second interview and before debriefing. Because there were significant mean differences among the interviewers, $F(2, 212)$ = 109.806, $p < .001$, η_p^2 = .509; and $F(2, 211)$ = 56.78, $p < .001$, η_p^2 = .178, for the first and second ratings, respectively, we standardised ratings within each interviewer as well as participants for use in analyses below.

3 | RESULTS

3.1 | Manipulation checks and preliminary analyses

3.1.1 | Emotion ratings

In addition to perceived consequences reported earlier, we examined whether participants were emotionally engaged in the experiment by computing a mixed ANOVA on their emotion ratings using Veracity Condition (2) and Liking Condition (2) as between subjects variables and Pre-Post (2) and Emotion (15) as repeated measures. The Pre-Post by Emotion and Pre-Post by Emotion by Veracity Condition interactions were significant, $F(14, 1,694)$ = 11.94, $p < .001$, η_p^2 = .090; and $F(14, 1,694)$ = 6.04, $p = .001$, η_p^2 = .054, respectively. We decomposed the three-way interaction by computing simple effects of Pre-Post separately for each emotion and veracity condition. Truthtellers and liars both increased in fear (Cohen's ds = .51, 1.14, respectively) and nervousness (ds = .52, 1.18). But only liars increased in guilt, embarrassment, worry, and shame (ds = 1.24, 1.05, .71, .78, respectively). These findings indicated that participants were emotionally engaged differentially by veracity, which provided a manipulation check on the procedures.

The operationalisation of liking was guided by Cialdini's (2005, 2009) principles, which suggested that liking was effective as a social influence principle because of increased positivity. Thus, the self-report emotion ratings also served as an additional manipulation check for liking (i.e., perceived or experienced positivity), in addition to the direct manipulation check afforded by the back-channel counts presented earlier. The Liking by Pre-Post by Emotion interaction from the mixed ANOVA above was also significant, $F(14, 1,694)$ = 1.88, $p = .025$, η_p^2 = .015. Simple effects of Pre-Post separately for each emotion and liking condition indicated that high liking produced less increases in guilt, embarrassment, worry, contempt, disgust, nervousness, surprise, sadness, and shame; greater increase in anger; and decreases in excitement and interest. Thus, the liking condition produced differences in the degrees of difference in emotional changes, largely consistent with intent of the manipulation.

3.1.2 | Relevant details, irrelevant details, and plausibility

We computed univariate, two-way, between subjects ANOVAs using Liking and Veracity conditions as factors on the dependent variables (informational elements) and mediator (rapport), separately for the interview and written statement. The Veracity condition main effects served as manipulation checks on the coding procedures for the dependents and was significant for Relevant details and Plausibility for the interviews, $F(1, 151) = 137.43$, $p < .001$, $\eta_p^2 = .48$; and $F(1, 151) = 210.21$, $p < .001$, $\eta_p^2 = .81$, indicating that truthtellers produced more relevant details and were more plausible than liars. This main effect was not significant for Irrelevant details in the interview, $F(1, 151) = .90$, $p = .35$, $\eta_p^2 = .006$. For written statements, this main effect was significant for Relevant details, Irrelevant details, and Plausibility, $F(1, 147) = 182.421$, $p < .001$, $\eta_p^2 = .55$; $F(1, 147) = 5.28$, $p < .05$, $\eta_p^2 = .04$; and $F(1, 147) = 241.56$, $p < .001$, $\eta_p^2 = .62$, indicating that truthtellers produced more relevant details and were more plausible than liars, while liars produced more irrelevant details (see Table 1 for descriptives by Liking condition).

Identifying interactions involving the Liking effect allowed us to select the correct moderated mediational model to test the hypotheses. The Veracity by Liking condition interactions were significant or marginally significant on Relevant and Irrelevant details from the interview, $F(1, 151) = 3.01$, $p = .085$, $\eta_p^2 = .02$; $F(1, 151) = 2.95$, $p = .088$, $\eta_p^2 = .019$. For the written statements, the Veracity by Liking interactions were significant on Relevant and Irrelevant details, $F(1, 147) = 5.76$, $p = .018$, $\eta_p^2 = .038$; $F(1, 147) = 7.72$, $p = .006$, $\eta_p^2 = .05$, respectively. The interaction on Plausibility was not significant in either the interview or written statement, $F(1, 151) = .102$, $p = .750$, $\eta_p^2 = .001$; $F(1, 147) = .646$, $p = .423$, $\eta_p^2 = .004$. These findings indicated the incorporation of Veracity condition as a potential moderator in the main analyses below.

3.1.3 | Rapport

Veracity by Liking ANOVAs on the rapport ratings indicated that the Veracity main effect was marginally significant for the interviewers' first rapport rating, $F(1, 154) = 2.86$, $p = .093$, $\eta_p^2 = .018$, and significant for their second rating, $F(1, 153) = 9.46$, $p = .002$, $\eta_p^2 = .058$, indicating that the second rapport ratings were higher in the truth condition than the lie condition. Interestingly, no effects were significant for participants' rapport ratings (Table 1).

TABLE 1 Means and *SE*s for the dependent variables (coded informational elements) and mediator (rapport) by liking condition

	High liking		Low liking	
Interview				
	Truthtellers	Liars	Truthtellers	Liars
Relevant details	13.77 (1.00)	3.76 (1.00)	16.78 (1.01)	3.28 (1.00)
Irrelevant details	13.85 (2.35)	20.13 (2.35)	16.84 (2.38)	15.03 (2.35)
Plausibility	4.33 (.22)	1.22 (.22)	4.47 (.22)	1.22 (.22)
Written statement				
Relevant details	9.57 (.63)	2.59 (.62)	11.78 (.63)	1.79 (.63)
Irrelevant details	5.62 (1.13)	11.28 (1.10)	6.43 (1.13)	5.90 (1.11)
Plausibility	4.72 (.23)	1.44 (.22)	4.74 (.23)	1.11 (.22)
Rapport				
Interviewer first rapport rating	−.93 (.17)	−.98 (.17)	−.05 (.17)	−.62 (.17)
Interviewer 2nd rapport rating	1.17 (.19)	.74 (.19)	.74 (.19)	−.04 (.19)
Participants' rapport rating	−.13 (.16)	.12 (.16)	−.05 (.17)	.05 (.17)

3.1.4 | Intercorrelations

We computed intercorrelations among the informational elements and rapport ratings (Table 2). Relevant details and Plausibility in the written statements and interview correlated positively with the interviewers' second rapport ratings. Participants' rapport ratings were correlated negatively with Plausibility from both interviews and written statements.

3.2 | Moderated mediational analyses testing Hypotheses 1, 2, and 3

We tested hypotheses using SPSS PROCESS with 1,000 bootstraps (Hayes, 2013). For all analyses, we used Model 5 (Veracity condition interacting with the path between liking condition and the informational elements), based on the preliminary analyses above (i.e., veracity condition interacting with liking condition on four of the six analyses). Also in all analyses, we included the interviewers' second rapport rating as the mediator, as this was the only rapport rating correlated positively with the dependents.

3.2.1 | Informational elements from the interview

The overall models were significant for Relevant details and Plausibility but not for Irrelevant details, $R(155) = .71$, $F(4, 150) = 38.01$, $p < .001$; $R(150) = .76$, $F(4, 150) = 52.74$, $p < .001$; and $R(155) = .22$, $F(4, 150) = 1.85$, $p = .121$, respectively (see Table 3). Liking had significant, negative direct effects on Relevant details, indicating that higher liking produced less relevant details. The conditional direct effects indicated that Liking had significant, negative effects on Relevant details for truthtellers (but not liars), such that the high liking condition produced less relevant details for truthtellers. Liking did not affect Irrelevant details or Plausibility ratings.

As predicted, liking also had significant, positive effects on rapport, $R(155) = .25$, $F(1, 153) = 9.75$, $p = .002$. In turn, rapport had significant, direct effects on Relevant details and marginally significant effects on Irrelevant details, indicating that interviewers' perceptions of greater rapport were associated with more relevant, and to a lesser extent irrelevant details. But rapport had no effect on Plausibility. As predicted, indirect effect analyses indicated that rapport mediated the effects of liking on relevant and irrelevant details.

TABLE 2 Intercorrelations among the dependent variables and rapport ratings

| | Interview | | | Rapport ratings | | |
	Relevant details (A)	Irrelevant details (B)	Plausibility (C)	Participants' ratings (D)	Interviewers' first ratings (E)	Interviewers' 2nd ratings (F)
A		.16	.82**	−.12	.12	.29**
B			−.19*	.11	.03	.14
C				−.20*	.15	.23**
D					.08	−.02
E						.41**
	Written statement					
A		−0.10	.85**	−.16	.12	.25**
B			−.27**	.14	−.004	−.07
C				−.17*	.11	.28**

*$p < .05$.
**$p < .01$.

TABLE 3 Moderated mediational analyses on the informational elements in the interviews

	Coefficient	SE	t	p	LLCI	ULCI
Relevant details						
Direct effects						
Interviewer rapport rating	1.02	.42	2.43	.016	.19	1.85
Liking	−6.57	3.13	−2.10	.037	−12.74	−.39
Veracity	−15.82	3.16	−5.00	<.001	−22.07	−9.57
Veracity by liking	3.12	1.98	1.58	.117	−.79	7.03
Conditional direct effects						
Truthtellers	−3.45	1.41	−2.44	.016	−6.24	−.66
Liars	−.33	1.43	−.23	.819	−3.15	2.50
Indirect effects						
Interviewer rapport rating	.63	.35			.18	1.63
Irrelevant details						
Direct effects						
Interviewer rapport rating	1.81	1.00	1.81	.072	−.16	3.78
Liking	−11.23	7.42	−1.51	.132	−25.89	3.43
Veracity	−7.86	7.51	−1.05	.297	−22.69	6.97
Veracity by liking	7.46	4.70	1.59	.115	−1.83	16.74
Conditional direct effects						
Truthtellers	−3.78	3.35	−1.13	.262	−10.40	2.85
Liars	3.68	3.39	1.09	.280	−3.02	10.38
Indirect effects						
Interviewer rapport rating	1.11	.68			.10	2.81
Plausibility						
Direct effects						
Interviewer rapport rating	.09	.09	.93	.356	−.10	.27
Liking	−.29	.70	−.41	.681	−1.66	1.09
Veracity	−3.30	.71	−4.68	<.001	−4.69	−1.91
Veracity by liking	.11	.44	.25	.804	−.76	.98
Conditional direct effects						
Truthtellers	−.18	.31	−.57	.573	−.80	.44
Liars	−.07	.32	−.21	.831	−.70	.56
Indirect effects						
Interviewer rapport rating	.05	.07			−.07	.24

3.2.2 | Informational elements from the written statement

The overall models were significant for Relevant details, Irrelevant details, and Plausibility, $R(150)$ = .75, F (4, 145) = 47.31, p < .001, $R(150)$ = .33, F(4, 145) = 4.56, p = .002; and $R(150)$ = .79, F(4, 145) = 60.80, p < .001, respectively (see Table 4). Like the interviews, liking had significant, direct effects on Relevant details and marginally significant effects on Irrelevant details; higher liking produced less relevant and irrelevant details in the written

TABLE 4 Moderated mediational analyses on the informational elements in the written statements

	Coefficient	SE	t	p	LLCI	ULCI
Relevant details						
Direct effects						
Interviewer rapport rating	.40	.27	1.47	.145	−.14	.94
Liking	−5.16	2.00	−2.58	.011	−9.11	−1.21
Veracity	−12.43	2.03	−6.14	<.001	−16.44	−8.43
Veracity by liking	2.81	1.26	2.22	.028	.31	5.31
Conditional direct effects						
Truthtellers	−2.35	.90	−2.61	.010	−4.13	−.57
Liars	.46	.91	.51	.614	−1.33	2.25
Indirect effects						
Interviewer rapport rating	.21	.20			−.06	.77
Irrelevant details						
Direct effects						
Interviewer rapport rating	−.49	.49	−1.00	.318	−1.45	.47
Liking	−6.94	3.56	−1.95	.053	−13.97	.10
Veracity	−7.11	3.61	−1.97	.051	−14.24	.02
Veracity by liking	6.29	2.25	2.79	.006	1.84	10.74
Conditional direct effects						
Truthtellers	−.65	1.60	−.40	.687	−3.82	2.52
Liars	5.64	1.61	3.49	.001	2.45	8.83
Indirect effects						
Interviewer rapport rating	−.26	.28			−1.03	.15
Plausibility						
Direct effects						
Interviewer rapport rating	.16	.10	1.64	.104	−.03	.35
Liking	−.34	.71	−.49	.626	−1.74	1.05
Veracity	−3.75	.72	−5.24	.000	−5.16	−2.33
Veracity by liking	.27	.45	.59	.554	−.62	1.15
Conditional direct effects						
Truthtellers	−.08	.32	−.25	.803	−.71	.55
Liars	.19	.32	.58	.564	−.45	.82
Indirect effects						
Interviewer rapport rating	.08	.07			.00	.29

statements. The conditional direct effects indicated once again that Liking had negative effects on Relevant details among truthtellers but positive effects on Irrelevant details among liars. Liking did not affect Plausibility.

Unlike the interviews, rapport did not have significant, direct effects on any informational element, indicating that interviewers' perceptions of rapport were not associated with those variables in the written statements. Indirect effects analyses indicated that rapport did not mediate effects of liking on Relevant or Irrelevant details but did so on Plausibility, however.

4 | DISCUSSION

Liking produced less Relevant details in both the Interviews and written statements for truthtellers, contrary to Hypothesis 1. Rapport had direct, positive effects on Relevant and Irrelevant details in the interviews but not in the written statements and mediated the association between liking and Relevant and Irrelevant details in the interviews, partially supporting Hypothesis 2. Veracity condition moderated the association between liking and informational elements, partially supporting Hypothesis 3; but contrary to hypothesis, liking had negative effects on relevant details for truthtellers in the interviews and written statements and positive effects on irrelevant details for liars in written statements.

These findings provided novel and nuanced insights into the role of liking on informational elements in investigative interviews as its effects varied by context. That liking produced less relevant details in both the interviews and the written statements by truthtellers may have occurred because the high liking condition produced a comfortable, casual setting, and interviewees interpreted that setting as being more relaxed and trusting and less suspicious. Investigative contexts characterised by interviewees' positive, smooth interactions with interviewers may give interviewees the impression that the interviewers' attitudes and reactions may be signs of reliance or trust, as partially evidenced by the differences in self-reported emotion between liking conditions. These signs, in turn, presumably may have affected interviewees' mindsets concerning whether to make efforts to persuade the interviewers about their veracity. Or, interviewees' may have had higher hopes for being agreed to by the interviewers. This interpretation is consistent with previous literature (Cialdini, 2004, 2005, 2009; Cialdini & Goldstein, 2004) showing positive associations among likability, compliance, familiarity, and similarity. Thus, whether interviews occur in a comfortable and casual context matters in how much interviewees consciously or unconsciously share thoughts with others.

This possible effect of liking, however, turned out to be dynamic, contingent on whether or not the interviewees had something to hide as the observed effect occurred only for truthtellers but not liars. One alternative to understanding mindsets underlying this outcome is that liars' awareness of the consequences of disclosing what they did might have limited the effects of the liking condition. While truthtellers may have been confident about their veracity without providing many direct details, liars may have tried to cover the lack of truthful details with irrelevant details, which may have made them appear as if they were making efforts to be cooperative. Also, liars may have felt more comfortable talking freely about details irrelevant to the target issues and tended to appear active in responding, which may have been beneficial for them to create an overall impression of compliance and disclosure. In contrast, truthtellers may not have felt that expending much mental effort was necessary.

Thus, our findings suggested that the function of liking is not linear, but fluid and multifaceted, depending on contexts. Liking as a social influence principle may have been interpreted differently by truthtellers and liars. For truthtellers, the likable, comfortable interview setting may have been perceived as a sign of relief and of being believed, whereas it may have been perceived as a trick or gimmick for liars. This possibility might be evidenced by the differential self-report emotion findings, which indicated that truthtellers had less changes in negative emotions but also some positive emotions (excitement and interest), and greater increases in anger relative to liars. To some extent, therefore, liking as a social influence principle may have limited impact on liars who have to conceal the truth at all costs in order to avoid consequences.

As predicted, rapport was positively related with relevant and irrelevant details provided by the interviewees in the interviews and mediated the effects of liking. In other words, rapport aided interviewees in sharing more information. These findings correspond to a growing literature demonstrating the importance of rapport in investigative interviews (Abbe & Brandon, 2014; Alison et al., 2014; Goodman-Delahunty et al., 2014; Holmberg & Madsen, 2014; Matsumoto & Hwang, 2018, 2019; Meissner et al., 2015; Walsh & Bull, 2010). More importantly, the current findings extend our understanding of the role of rapport on the production of informational elements in combination with social influence principles and tactics. In this study, liking, which has various effects and meanings context by context, facilitated rapport which, in turn, mediated the effects of liking on informational elements. Thus, rapport is indeed an important factor to facilitate more information production during interviews.

The current study also contributed additional empirical evidence for the practical role of rapport, which is more complicated than mere feelings of liking or positivity, and to further understanding of how rapport could play its role differently, at least in in-person interviews and in written statements. Although having written statements might be optional nowadays, higher rapport may or may not be related to the information provided in such statements. Higher rapport may induce less details that are relevant to the core facts and may have less effects in written statements. Thus, the findings reminded us that considering rapport as a key to successful interviews may be reconsidered if multifaceted functions of rapport are not well understood.

Relatedly, the null findings involving interviewees' perceptions of rapport with their interviewers on the amount of information produced indicated that interviewees' perceptions of rapport were not a meaningful factor that encouraged or discouraged more information during interviews. This is opposite to common expectations that good rapport perceived by all interactants will be helpful to obtain more valuable information at all times. Thus, the effect of rapport may depend on context, and focusing on building rapport only may be risky in investigative interviews, especially when stakes are high.

Practically, these results suggested that conducting in-person interviews is crucial not only to verify any unclear existing information but also to collect potentially imperative information. Because of the important roles of rapport, interview strategies and tactics that consider the perspective of interviewees is vital. Guiding interviewees using appropriate questions may sometimes determine the contents of the interview and its outcome. How irrelevant details can facilitate the production of new relevant information is a challenge. A rapport-based approach is also presumed to be practical when interviewing witnesses, informants, accomplices, and so on who may not have to deal with direct consequences of their actions.

The current study confirmed that truthtellers and liars possibly have different mindsets and differentially envelop themselves into interview contexts. That is, truthtellers and liars must perceive the same context (or social influence tactics) differently and thus react differently cognitively, behaviourally, and emotionally. As part of interviewing skills, identifying these different mindsets may be a key in investigative interviews, along with other factors such as how and when to ask questions. The first gateway to effective results may be understanding that truthtellers and liars can react differently to the same situation.

The different mindsets of truthtellers and liars were revealed on the written statements but not the interviews, which may have had more flexibility in sharing information. One interesting difference in findings between the written statement and the interviews was that the liking conditions affected the informational elements produced in both sources in similar ways, but rapport was associated with information only in the interviews but not in the written statement. This suggests that the quality of the interaction between the interviewers and interviewees, as assessed by rapport, was effective in producing some mindset differences between truthtellers and liars. For this reason, interviewing is an optimal chance to verify veracity and influence the mindsets of liars. Interviewers may consider using different approaches and tactics and verify their assumptions. Previous literature and the current study are aligned to the same conclusion: one interview tactic cannot function perfectly across conditions and individuals. Questions remain concerning in which contexts truthtellers and liars have different mindsets and in which their mindsets would work similarly to motivate them to provide more information.

The current study had limitations that should be addressed in future studies. One concerned the operationalisation of liking, which involved interviewers' behavioural reactions to the interviewees (i.e., backchannelling, echoing). There are other ways to elicit likability or positivity that may produce different findings, such as enhancing similarities between interviewers and interviewees or more empathic responding. These and other liking-producing tactics should be explored in the future.

In relation to assessing liking, interviewees' perceptions of liking (and other social influence principles) would be important to extend knowledge about possible mediators (as well as serve as additional manipulation checks of the social influence tactics). In our study, although pre- and post-emotion rating were germane to assessing changes in positivity and feelings of liking, and the interviewers' behaviour consistent with the operationalisation of liking were

confirmed, other assessments can be used for its manipulation check, such as interviewees' impressions of interviewers. Such variables should be considered in future studies.

Future studies can identify the boundaries of liking effects. Although there is literature supporting a positive effect of liking on persuasiveness (Griskevicius et al., 2009), other studies (Guadagno, Muscanell, Rice, & Roberts, 2013) have reported a limitation of liking in online communication in decision making. Given the fact that in-person and online interactions both are different types of social contexts, examining how social influence principles interact with contextual factors remains an important empirical question. Furthermore, a variety of crime types that are linked to the level of stakes interviewees may experience should be evaluated. As our findings suggested that there may be no single tactic that works to discern truthtellers from liars, the severity of the criminal acts committed and the perceived associated legal responsibilities would more likely affect the mindsets of truthtellers and liars.

Additionally, interviewers have their own interview tactics, with some conducting interviews prior to obtaining a written statement to verify the contents provided during the interview, or vice versa. The findings reported in the current study are limited to the case of interviewers who request a written statement first, followed by conducting an interview. Extending the current study by examining order effects related to when written statements are requested would be important for future studies to consider.

Lastly, we did not find gender differences in the effect of liking. Previous studies have shown that women are more likely than men to be influenced by bonds with an influence agent due to social roles (Guadagno & Cialdini, 2002, 2007). The non-significant difference in genders may be meaningful, as liking and other social influence principles may have similar effects across genders. However, there is always a chance that the non-significant finding might have been produced erroneously. Future studies should continue to examine possible gender differences in investigative interview contexts.

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CONFLICT OF INTEREST

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